



# Safety and Health Snapshot for the Western Australian minerals sector

## Electric shocks

Issued September 2022

Electric shocks can occur when you come into contact with a source of voltage high enough to cause sufficient current flow through the muscles or nerves. Contact with electricity at any voltage can be highly dangerous and you should always be assessed by a medical professional should you experience any contact.

This snapshot covers the period from 1 January 2020 to 31 December 2021 (unless stated otherwise). During this period there were a total of 601 incidents and 4 injuries related to electric shocks.

For more information about workplace health and safety, visit our website [www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

WorkSafeWA

WorkSafe WA

WorkSafeWA

### Notifiable incidents by area

**524** of the 601 notifiable incidents occurred during **surface operations**



**77** of the 601 notifiable incidents occurred during **underground operations**



### Top 5 non-compliances identified by electrical audits in 2017-21

**33%** Work in close proximity to energised, low-voltage conductors was not carried out in compliance with the applicable *Code of Practice for Persons working on or near energised electrical installations*

**33%** Details of persons appointed to issue 'Ground excavation permits' were not recorded in the Mine Record Book

**31%** Entries made in electrical log books were not properly completed

**28%** Persons appointed to issue 'Ground excavation permits' had not acknowledged their authorisations

**28%** Managers had not provided a written summary of responsibilities and duties to persons appointed to issue 'Ground excavation permits'

### Number of incidents

**88** of the 601 incidents had **strong potential** to result in an injury

**64** of the 601 incidents were the result of **static electricity**

### Injuries by severity

**4** of the 4 injuries related to electric shocks were **classified as minor**

### Incidents by site activity

**43%** were **operations**

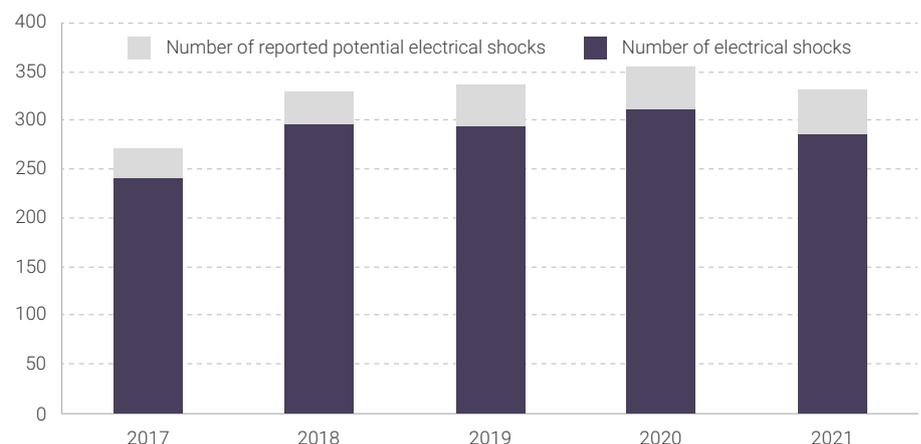
**34%** were **maintenance**

**18%** were **support services**

**3%** were **construction**

**1%** were **exploration**

### Electrical shock incidents in the last 5 years



Note: The information in this snapshot has come from a keyword search of incident reports.

## Spotlight on Mines Safety Significant Incident Report No. 275

### Electrician received 1000V electric shock and burns

17 May 2019



#### Contributory causes

- The electrician was working near energised electrical equipment.
- The electrician did not isolate or test before working on the equipment.
- There was no protective shroud over the 1000V control transformer terminals.
- The rubber insulating glove was punctured when pushed past sharp edges of the terminals.
- Inadequate personal protective equipment (PPE) was being used.



### Additional information

- [Guidance about electrical hazards](#)
- [Guidance about working with high voltage electricity](#)
- [Guidance about working with low voltage electricity](#)
- [Guidance about earth leakage protection](#)
- [Guidance about trailing and reeling cables](#)

## Some recent incidents

14/4/2021

A fitter at an open pit was lifting up a retractable extension lead from a trolley when they received an electric shock to their hand and the RCD tripped. The fitter was taken to the site medical centre and given a precautionary ECG before being cleared to return to work. An inspection found water from a rain event in the extension lead head.

6/7/2020

A worker was jackhammering in damp conditions at an underground mine when they received an electric shock. They were taken to the medical centre for a precautionary ECG and monitoring, before being cleared to return to work. The circuit and protection devices were tested and found to be compliant and in good working order.

19/9/2020

A worker noticed a blackened cord on a dryer in the laundry room at an underground mine. The worker received an electric shock when they attempted to isolate the dryer by switching it off at the power point. The power point was isolated at the switchboard and the supervisor was notified. The worker was taken to the regional hospital for a precautionary ECG and cleared to return to work. An investigation was commenced.

7/4/2021

A worker at an open pit was installing blinds in an accommodation village when their drill contacted the light switch wiring, causing the RCD to trip. The worker did not receive an electric shock, but was taken to the site medical facility as a precaution before being cleared to return to work. The accommodation unit was isolated pending an electrical inspection.

## Electrical hazards

Contact with electricity can occur when:



Using electrical tools in damp environments



Lack of or incorrect personal protection equipment



Water ingress to electrical machinery, tools and control switches



Unauthorised access or repairs



Contact with underground or hidden cables

## Safe work practices



Isolate, tag and test equipment before commencing work



Insulate and shroud live electrical components to prevent accidental contact



Obtain a permit before digging where buried cables may be present



Lock or secure electrical equipment with a fixing that can only be opened by an authorised person with the right tool